

Improving COLLEGE AND UNIVERSITY

Teaching

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Index to Volume IV

Improving COLLEGE AND UNIVERSITY *Teaching*

Editorial: TEACHERS AS LEARNERS

Four Suggestions About Examinations Luella Cole

Classroom Gadflies N. Bryllion Fagin
The Johns Hopkins University

Watch Out for Relatives Max S. Marshall
University of California

Speech for True Communication William Charles Korfmacher
Saint Louis University

Two-Year Colleges: Their Promise for the Future .. Ordway Tead
Member, Board of Higher Education, New York City

Why Do I Lecture? Why Do I Use Discussion? Oliver S. Loud
Antioch College

The Scholar Must Also Teach Kenneth E. Eble
University of Utah

Between Periods A. M. Withers
Virginia Polytechnic Institute

"Reflections of a Physicist"—Book Notes



Improving College and University Teaching

Featuring Articles on College Teaching
Written by College Teachers

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Teachers as Learners

Is it possible that podium and lectern have too important a place with professors? Do they cause professors to talk too much, or to talk down to their students? Or to seem superior and remote when, for the best learning, there needs to be free access between teachers and students? Does a platform serve simply to help a teacher to be seen and heard, or does it serve in lieu of stage and spotlight for a performer whose greatest love is an audience?

Pride, one of the seven deadly sins, spares not the professor. His greater knowledge, age, and experience as compared to his students easily tempt him to vain display of erudition. One need not seek far—perhaps no farther than oneself—to observe the gratification a teacher can find in a sense of superiority over the less tutored and the less experienced. This, of course, is proper; superiority is a credential of teaching, and a certain pride in superiority is natural enough.

But an insidious danger threatens the teacher who here fails of control. An appetite for adulation and fawning sycophancy may be acquired. Students will feed the vanity of their teachers if they can—or if they must. A result is corruption of the teacher and damage to the teaching. Still worse, and inescapably, there is corruption of the student and damage to the learning.

The corrective of vanity is humility, a virtue all should cultivate and professors, perhaps especially, should profess. Humility is a condition, not only of worthy teaching, but of research. At the frontier of the vast unknown a man forgets all personal vanity. Advancing where and as far as he can, he ultimately may stand in sober triumph, happy for what he has gained but humbler than ever before because his gain at best is small. It may not be true that "if you know your subject you can teach it," but the pursuit of one's spe-

cialty, in research, provides certain requisites of teaching—namely, a zeal for knowledge and a humble realization of the meagerness of one's own attainments in comparison with the total store of knowledge known or to be known.

These qualities fit him for teaching, for the stimulation and guidance of learning. Whether or not he shares his research in any direct way with his students, they can catch his spirit and be stimulated by the company of a fellow learner.

He who would truly teach needs simultaneously to learn. Socrates as a learner sought out and questioned the wise men of Athens, and as teacher he taught by questions which he asked sincerely. Agassiz used his students to explore fields for him and gave them the memorable experience, after a time, of teaching Agassiz something. A graduate student in telling about his favorite teacher recalled that the man often sat in other classes with his own students, seeking to learn more, to improve his own teaching, or to avoid duplicating. Marie Rasey's Dr. Randall undertook a new problem or research project when preparing to meet a new group of students in order to provide the contagion of learning. Frank Laubach is promoting world-wide literacy on the chain principle of "Each one teach one," each "teacher" himself a learner only a step or two ahead of the one he teaches.

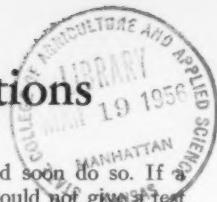
The reciprocal fruits of teaching and learning have long been understood though not as often practiced. Spinoza handed his manuscripts round among his students, learning thus not only to express his thinking better but actually clarifying and enriching his thought. Many a doctoral candidate has profited from the teaching as well as the financial side of an assistantship. It is a truism that you never know anything until you teach it.

Still another avenue of study is open to the teacher. As a biologist would profit by access to an arboretum or a menagerie where he could study living plants or animals, so may a teacher profit by observing his students in their learning. He can see his teaching reflected in their learning. He can be with them a fellow learner, learning from them sometimes but unfailingly, if he so orders it, learning with them. May it not delineate and dignify teaching to realize that the teacher may grow in knowledge, not only in his research laboratory or library cubicle, but also in his classroom relations with students?

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Four Suggestions About Examinations

As long as students are interested in the marks they will get, and as long as examinations play a large part in determining marks, examinations will continue to be of primary importance in the teaching-learning process. The examinations one gives reveal the kind of teacher one is. Dr. Cole, psychologist, author of numerous successful books on education and educational psychology, including an excellent book entitled "The Background for College Teaching," here draws on her experience as a university teacher to give four notable suggestions on examinations. This contribution came as a result of urging by the editor, who believes that many college and university teachers can make good use of one or more of her tested testing procedures.

By LUELLA COLE

It has been such a long time—now over twenty years—since I was last a college professor that I hesitate somewhat to contribute an article upon any phase of college teaching. However, by request, I am setting down some ideas developed many years ago but perhaps just as useful today as then. The first suggestion deals with the ever-bothersome problem of the make-up examination and outlines a procedure for avoiding this nuisance altogether. The second describes a type of examination that is halfway between an objective and a written test and retains some of the values of each. The third explains a simple procedure that greatly improves the coherency of essay examinations, while the fourth presents a method of testing for use in small advanced classes.

(1) At the beginning of a semester I explained to the students that I should give frequent, short tests, without warning. There would be no warning because I already knew about how much students could cram into their heads the night before a test and did not therefore need to waste their time and mine in finding out. What I really wanted to know was what they carried around in their heads all the time. I explained further that there would be no make-ups. If a student missed a test, for whatever reason, he would receive an E on it. However, at the end of the term I would drop off everyone's lowest mark. Thus, a single absence would not affect the final standing, but a

steady failure to appear would soon do so. If a student wished to bet that I would not give a test on a given day and absented himself from class, that was his inalienable privilege. If he guessed right, he escaped unscathed; if he guessed wrong, he took the penalty. Those students who never missed a test would also benefit by the arrangement, because their lowest mark also disappeared. Thus, a good student with 8 A's, 1 B, and 1 C on ten quizzes would lose his C. Finally, I told the students that if any of them were in the habit of remaining away from their classes, for whatever reason, I would advise them to drop the course and would willingly sign a drop slip for them without comment or question. Those who remained would know upon what basis the examinations would be held.

After the students got used to the idea of unannounced examinations, they found three values in the plan: First, they never needed to cram. The absence of this familiar pressure was pleasant. Second, the frequent short quizzes made each one of less importance than a single long midterm, and helped in alleviating their fear of examinations. Third, their poorest work—a test given on one of their "off" days—was cancelled. To the teacher also the method gave a welcome relief, because he had less examination hysteria to contend with and because there were no tiresome make-ups.

(2) The instructor with a class of any size over fifty, let us say, is driven inexorably to the use of objective tests, whether or not he approves of them, because there are only twenty-four hours in a day—and the larger the class is, the greater is the pressure toward the use of objective examinations. These tests have their uses, but they do not always meet the needs of the college teacher. Some years ago I began to use a sort of hybrid examination. I presented the students with some 25 questions, from which they were to choose a given number—perhaps 12. To each of those selected they were to write an answer in not more than three sentences. I told them that I should score the first three *real* sentences they wrote for each question, no matter what punctuation they used, and should simply disregard anything beyond that point. This type of test obviously has its shortcomings, but it has values also. It requires

the student first to decide which questions he prefers to answer. Then it requires him to select from what he knows the most significant points. He cannot waste his time and yours by writing such beginnings as, "This is a very interesting question, to which a number of different answers might be given," because he uses up a third of his allowed space, saying nothing. Also, he learns to condense into three sentences what he would much rather spread in dribblets over fifteen. Students, especially in beginning classes, do not know more than three sentences' worth on any one point, and they get into the bad habit of padding their few nuggets of wisdom with a great deal of verbiage. The papers that result from this type of test are quite easy to score and take little more time than a set of objective examinations. This type of test is, of course, not equally useful in all classes, but it does ask the student to put a little of himself into the examination.

(3) My third suggestion can be used to improve the quality of essay tests, in case one still uses them. The teacher passes out the questions and one sheet of paper, but no blue-books. He then tells the students that they will have twenty minutes to read the questions through, to think, and to jot down whatever notes might help them in writing their answers. At the end of twenty minutes the students get their blue-books. By this method, the student cannot plunge at once into writing; for twenty minutes he has nothing to do but think, so he thinks. The resulting papers are clearer and better organized than is customary. Almost all students finish the examination without evident strain. And there is a marked reduction in the amount of crossing and transferring of answers because a student may find—when he reaches the fifth question—that he has already mistakenly used the material in answering the second. After the students become accustomed to the idea, they discover for themselves that the twenty "wasted" minutes at the beginning of the period have saved them both time and trouble. Also, they get into the habit of planning answers on written tests.

(4) For use in small, advanced classes I should like to describe a type of examination that some of my own college teachers used. When we reached the examination room, the teacher produced a handful of library cards which he or she fanned out—written side down—like a bridge hand. Each student drew a card. All were different. We were

then turned loose for three hours. We might write in our rooms, consult our notes, use a typewriter, smoke, go to the library, or sit under a tree and think. In theory we could even talk with our classmates, but there was little use in doing so, since they were working on entirely different questions and did not care to be interrupted. In some cases, if the questions were of markedly uneven difficulty or if we had done different amounts or types of reading during the semester, the teacher assigned the cards instead of letting us draw them. I well remember being given the following question at the end of a course on the Civil War: "Dr. A believes that the Civil War was a wholly political struggle. Professor B believes that it was a wholly social and economic struggle. Write a dialogue between the two, in which each sets forth his convictions, with his reasons for them, and tries to persuade the other to accept his arguments." This question was given to me because the teacher had noted that I had elected every writing course in the catalog and had done reasonably well in them; she therefore had no hesitation about asking me to compose a hypothetical conversation. When a teacher has a small enough class, he or she can assign questions in such a way as to utilize a student's past experience.

It has been my conviction for many years that an examination should be interesting to the teacher and both stimulating and profitable to the student. To any reasonably well-prepared student an examination *ought to be fun*—not a dreary chore. The last type of test described was interesting and challenging. In working on it, one forgot that the thing had a police function as well. In the case above quoted, in fact, I modified the instructions and wrote an exchange of letters between two sisters, one of whom had married a southerner and embraced the southern cause enthusiastically, while the other had become an "emancipated" woman in Boston. Having spent eight years in a girls' school and a woman's college, I felt I could not write a natural-sounding conversation between two men! No one seemed to care. One does not take such liberties with a test, however, if one is concerned only with its police function.

These thoughts are admittedly a bit wandering. Although they are all centered upon the general topic of examinations, they have little relationship to each other. However, a college teacher may find among them a suggestion that is of value to him.

Classroom Gadflies

Born in Russia, educated at Michigan State, George Washington University (A.B., A.M.), Columbia, Harvard, and Johns Hopkins (Ph.D.), Dr. Fagin has been an English professor at various universities and at Johns Hopkins since 1931. He is prominent as a contributor in both drama and literature. The following article when it appeared in "Educational Forum" was so outstanding in its sincerity, brevity, and appeal that the generous permission of the publisher and the author was obtained to present it here.

By N. BRYILLION FAGIN

The first inkling that permitting students to ask questions might be dangerous for the teacher came to me one evening when I was entrusted, for the first time, with a course in the modern novel. I was twenty-three years old and most of my students were older, and possibly more widely read, than I. Yet I wasn't scared. Boldly I stood before them and with the aid of notes copied from impeccable sources, told them about the then fashionably acceptable novelists: American, English, French, German, Russian, Scandinavian. . . . They listened to me, and I was intoxicated with my received critical opinions and my gifts of exposition and articulation. I was, apparently, a successful teacher.

Then, at the end of one of my lectures, a man stood up to ask a question. I knew him by name as a contributor of poetry to various little magazines and I was proud that such a personage was one of my students. Since he may still be contributing poetry to little magazines, I shall suppress his real name and call him Mr. Johnson instead. It was this man, for whom I had a great deal of respect—and perhaps a little envy as well—who stood up and asked: "What do you think of George Gissing?"

For a mere second I was stunned. Gissing, at the time, was only a name to me. But I quickly regained the poise and self-confidence which a teacher, I had been told, must have, and plunged: "Why, it is still too early to say anything definite about Gissing. He is a talented young writer who is destined to do great work. All he has done so far indicates brilliant promise."

Mr. Johnson's reaction to my answer made me uneasy. He stood there, in the rear of the room,

contemplating me for a full minute, then said quietly, "Thank you," and sat down. He never came again to my class.

That very evening I consulted an encyclopedia and discovered the slip I had made: George Gissing had died in 1903.

Since then I have learned of many other dangers to which a teacher exposes himself by permitting his students to ask questions. He is urged to encourage expression in his classroom. He must not tolerate passive listening: he must stimulate thought, inquiry, "participation." And in almost every class there are a few vocal students who are only too happy to rise and shine. The other day I happened to mention the name of John Galsworthy and a Miss Johnson promptly raised her hand. "Did you know," she asked, "that Galsworthy was a member of the Society for the Prevention of Cruelty to Animals?" I had not known it, and therefore thanked Miss Johnson for adding to my stock of knowledge. But she wasn't satisfied; she proceeded to tell me and the class all the details of Galsworthy's activities in behalf of dumb creatures.

How to turn the Miss Johnsons off without discouraging the Mr. Johnsons is a problem I have not yet been able to solve. I once began a course by announcing that I would welcome all legitimate questions and comment. The result was an icy atmosphere which it took me a month to thaw. No one apparently knew what was legitimate. After a while I found myself blessing the few vocalists who dared intrude upon my monologue.

Nor are the Mr. Johnsons always innocent poets. Myself when young once took delight in tripping up a professor whose knowledge of modern poetry was somewhat frail. By now I can spot the perverse imps in a class who are ready to capitalize on the imperfections of my memory or scholarship. From my side of the desk or lectern their efforts to flatter their egos at my expense appear to me somewhat less than amusing. I sometimes resort to complimenting them on their mental vigilance.

Neither am I always amused by the congenital debaters who somehow appear in most classes and are ready to engage in combat at the drop of a word. Sometimes the word is an opinion which arouses their indignation; sometimes it is my fail-

Watch Out for Relatives

Dr. Marshall, microbiologist in the University of California Medical Center, San Francisco, wrote the leading article in the first issue of this journal, February 1953. Author of the provocative book "Two Sides to a Teacher's Desk" and of numerous articles on university teaching, he is distinguished first of all as a biologist with many research contributions in the field of his specialty.

By MAX S. MARSHALL

Taxonomy refers to the "laws" of arrangement. By following plausible or established relationships and sequences among plants or animals not only is order brought out of chaos but a pattern is established which describes the latest conception of the relationships between different animals or plants.

GROUPING BY RELATIONSHIPS

In genuine taxonomy relationships are hypothetically established or at least claimed. Sorting is only one feature of taxonomy. Tossing into

Classroom Gadflies—continued

ure to mention one of their literary enthusiasms: T. S. Eliot, Henry James, William Faulkner, Charlie Chaplin, or (in one recent case) Micky Spillane. They glory in appearing impudent. "You are just temperamentally not able to appreciate Truman Capote!" a fiery-eyed crusader informed me publicly. "Perhaps," I admitted affably.

Yet, in honest summary, I find that I—along with all other teachers—owe a debt of gratitude to these bad, mad, perverse, provoking students. They bring color and sound, tension and irritation into a classroom. Everything but dullness. They make me wary of my shortcomings, puncture my complacency, and keep me from sinking into comfortable slothfulness. I sometimes catch a suspicious anticipatory gleam in a bright eye just as I am about to repeat an ancient anecdote or a threadbare joke—and I desist. They make me reread the books on which I lecture, check my old notes, prepare new ones, and curb my stylistic extravagances. And during examinations it is exhilarating to come upon a paper that does not give me back all my own thoughts, many of which, when written down, do not deserve a passing grade.

categories as the mailsorter tosses letters into bags is only a matter of orderly convenience.

The taxonomic approach can be misleading. Man loves his taxonomy and too often does not distinguish between true taxonomy and a common apparent replica. In zoology, botany, and microbiology an equal orderliness or arrangement is possible, without which there would be chaos. However, whereas in botany and zoology relationships are established, in microbiology only the arrangement is established because there are no known relationships. Troubles arise because this sorting implies relationships which do not exist.

If all plants were to be divided into ten groups there would be over 3,000,000 possible ways that they might be lined up, but only a few would properly express known or suspected relationships. With no such relationships, 3,628,800 separate debates could be held to justify personal preferences for each possible order.

Education certainly contains ten or more elements; well over 3,000,000 schools of thought can exist and often seem to do so. Why? Because orderliness as such is forever being mistaken for taxonomic orderliness, implying relationships.

SORTING FOR CONVENIENCE ONLY

The moment an arrangement is made solely for the sake of order without implications of relationships the outlook changes materially. In a grocery store the canned peas may be half a block from the fresh peas. In a flower arrangement relationships are in terms of design and color, a wholly nonbotanical taxonomy; species mean nothing. What is the "law of arrangement" of the businesses on Main Street? Try sorting the children in your block; you sort by families but their teacher sorts by grades. Buy a dozen eggs and you take a lot sorted by size, color, cleanliness, and freshness; raise your own chickens and, sure of freshness, no attention is paid to any sorting. Look up the spelling of "syzygy" and think over the reason that it took just eight seconds. If stories could be written without repeating a single word, there are enough words for seven novels in which "syzygy" would occur once, requiring a long, difficult search.

In these samples there is a sorting for convenience, sorting without taxonomic connotation. It is convenient to think of canned foods at one

time and to find them perhaps next to canned detergents. What is convenient for "me" is not always convenient for "everybody" but living together usually brings quick compromises. With many of our sorting processes, so much more common than we consciously realize, there is no thought of implied relationships. No one assumes that A is related to B in the alphabet; it is there by stipulation.

CONFUSING MERE SORTING WITH TAXONOMY

Between full taxonomy and the common sorting of daily living there is a vast deal of trouble due to confusion of the two. Few persons have ever worried about the sorting of viruses, either taxonomically or for mere convenience. Genuine scientific progress comes from an increase in knowledge about them. This is inhibited by any unwise, improper, and premature arrangement other than for momentary convenience. However, a small group of would-be authorities sanctioned a purported taxonomic classification that was automatically widely distributed. The effect of this was evil. Students, editors, outsiders, and experts in biology but not in viruses assume that this taxonomic sorting implies legitimate relationships, as with botany or zoology, thereby gaining a completely false impression. Future progress is impossible because an open mind, needed to develop further knowledge, is closed by preconceived answers. Call a man a German. To taxonomist No. 1 he is a great man and to taxonomist No. 2 he is an arrogant despot; but to No. 3, not a taxonomist, he is just a man to be viewed with dispassionate charity until he reveals personal attributes perhaps to him pleasing and perhaps not. "German" means only geographic origin.

Illustration is now possible with a subject which will indicate not only how widely spread the taxonomic approach is but also how dangerous and troublesome it can be. Failure to use the simpler approach, orderliness for convenience, can be serious. Every teacher has heard prolonged taxonomic discussions of curricula. Discard of the taxonomic approach and the use of purely pragmatic classification might well save almost enough man-hours to overcome the shortages of teachers, since teachers would then quit debating and go back to teaching.

RELATIONSHIPS THAT DO NOT EXIST

Most of the relationships among the elements of curricula are only poltergeists. For example, algebra is supposed to be closely related to engi-

neering or to physics. This relationship is not real, natural, basic, and intrinsic, warranting a taxonomic approach; it is merely useful. There have been great men in physics who have been doers to whom algebra meant little; experts in algebra are often dullards mechanically. Is the curriculum made up of essentially related elements or has it perhaps grown, like lizards or poison ivy, under natural laws independent of man? Are the relationships stipulated by man or are they fundamental and real?

Straight answers to questions of the curriculum reveal clearly that invariant or true relationships between elements of the curriculum are few and far between. Vociferously rationalized relationships, however, are invented to support nearly all curricular arguments. Debaters in such matters endeavor to put over their own conveniences by claiming relationships, using taxonomic excuses to hide arrangements of convenience. The argument is false at its roots unless genuine taxonomic relationships can be proven, which is rarely the case. One man turns to mathematics, another seeks music, a third feels the urge to do things and becomes an agriculturalist or a dentist, and a fourth, liking human affairs and debate, becomes a lawyer. Differences both in men and in their activities have led to a division or sorting of knowledge into compartments. Basic compartments have become departments. Mathematics, chemistry, physics, zoology, botany, philosophy, history, and languages came into being as basic curricular elements. Combinations and relationships to make musicians, lawyers, or doctors are something else again.

This leads to the fencing for position, a process which is wrecking our schools on a large scale, introducing such a state of seismic instability that the ambitious and the malcontents have little trouble in disrupting the basic units. Those in charge of these units are forced to leave their plows and join in war or die of insecurity and malnourishment. The original battles of curricula were based entirely on hypothetical relationships among basic subjects. How much language does a physics major need? Isolate that question and note how absurdly unanswerable it is, despite the fact that a practicable answer is needed. Should a music major have four units of science? Merely to pose some of these questions will make old timers shudder at the thought of the next twenty weeks of dispute followed by no more than a political victory, if any. The debaters say no more during

all twenty weeks than that knowledge is a complex thing and that a well-rounded person is a rare one.

Ideally, in a good basic education a balance of the elements is needed rather than specialization. When in due time a student faces the need for a place in the world or shows so strong an inclination toward one activity that efforts must go in that direction, a slanted curriculum is necessary. When that direction is music, algebra is likely to be out of place, though not for all students. Timing becomes significant; algebra is wisely studied before the bent toward music becomes inhibitive. No precise balance exists. Plain wisdom demands that students sample all possible parts of the total knowledge of the men and women of a good faculty, mixing this with all possible personal reflection and with the books of predecessors and contemporaries. A curriculum in this basic sense is only a sorting of convenience. The taxonomic implications of natural relationships lead to long disputes and misleading of students and members of faculties. There is seldom an excuse for a taxonomic approach. Curricula start from basic ideals, never reached, and end with practical convenience, subordination to the expedient. No answer will be found in universally applied rules, in units or credit hours, or in plans which ignore the fact that personal knowledge is a composite never twice alike, lending itself to no formula because there is no standard for a relationship between its components and the person concerned. The plastic taxonomic approach, sounding so plausible as it is twisted to suit the whims of the vociferous talker in committees or meetings, is almost always false at its roots.

BIRDWATCHER COMPLEX

Modern discussions of curricula are not often held to the plane of basic elements of study. Platitudinous relationships between sciences and humanities are more often debated than relationships between botany and calculus; languages may be discussed but it is not easy to provoke a discussion of Latin. The shift is toward platitudes, toward elements that are not such, and toward purported elements that do not exist. The taxonomic approach, which implies intrinsic relationship, has all but taken over. Sometimes botanists and zoologists try to force the plant or animal anthropocentrically, even egotistically, into taxonomic categories made by man, categories to which nature is under no obligation whatever. The phenomena of naming, scoring, and patting

self on the back, the birdwatcher complex, is neither sorting for convenience nor taxonomy. The crime occurs in official circles when the experts behind the scenes try to force nature to their wills rather than to understand it, when relationships which are not there are implied, or when relationships which do exist are magnified by personal preferences, egotism, or convenience.

With curricula, basic subjects have been made into nonbasic subjects by self-styled authorities in taxonomic curricular nomenclature. In its simplest form knowledge was one called Reading, Riting, and Rithmetic. Conservative progress expanded these a bit and subdivided them somewhat without losing their integrity. Then two other forces entered under the guise of taxonomy, implying intrinsic relationships between elements which were only extrinsically related. One force was the urge to invent new purported basic subjects. For example, Statistics grew normally out of mathematical probability and then, once labeled, it was taken away from mathematics by political maneuver. The excuse: the *relationships* (?) indicate (?) that Statistics *belonged* (?) in another genus. The only relationships, if there were any, had to do with nepotism on the faculty. The second force was also based on rationalized ambition. Portions of basic subjects were combined in new ways, as they have long been combined to produce medical men or lawyers. Only a small amount of juggling is needed to claim relationships which permit schools of optometry, forestry, business administration, or watchmaking. All efforts of man are combinations of the basic elements. There are as many combinations as there are molecules, but these are related by the valency of man's needs or wishes, not by any intrinsic natural magnetism.

The taxonomic approach thus reads a "natural" order into whatever sorting suits the wishes or nature of the sorter. Issues are stretched and tangled when they could be designed on simple lines. Endless battles for supremacy of power or ideas are started by claiming relationships. Curricular principle declares that there are only a few basic subjects, a small finite number and by no means an infinite number as at present. The few trades and professions acceptable within school walls are treacherous occupants; a few by long tradition have learned moderately well the rules of association. Within the meaning of education in a pragmatic sense, many others lack the taxonomic relationships claimed for them. When ed-

WATCH OUT FOR RELATIVES

ucationists and faculties argue that relationships are absolute, beyond the power of man to control, beware! What are called simple statements of natural fact are often in truth pushes for personal ideas of convenience or power. Curricular relationships may be as convenient as the alphabet to all men (as in the School of Medicine) but usually the convenience is restricted to a group of pushers (School of ——).

The curriculum furnishes so admirable an example of the distinction between the taxonomic approach and sorting for convenience that the temptation to follow the curriculum rather than the main thesis, the taxonomic approach, is strong. The curriculum illustrates the error which, understood and rectified, would save endless hours.

The approach of implied but untrue relationships is also used in administration, putting aside simple and convenient sorting in favor of endless committees, forms, and carbon copies built on fancied relationships. It is used in organization, implying that "natural" links exist instead of purely synthesized relationships designed to serve political ends, destroying freedom and individual independence. The approach is notable in advertising, with its suggestions of relationships which may sell without the slightest regard to real relationships. Scientists often imply that relationships are inherent in natural laws to justify observations and theories which are in accord with their wishes and emotions. An unfortunate perversion of truth is brought about by this form of rationalization. If you doubt this examine the history of biologic theories which have fallen. Theories are expected to serve and to fall, but examine the reactions of man during their rise and fall as over and over blind faith is falsely underwritten by purported scientific logic. Watch the taxonomic ups and downs of an antibiotic, or the course of something as sadly distorted as the Salk vaccine, the fall of which still lies ahead. The physical sciences make taxonomic errors, too, but less frequently.

To charge so many errors to too common a use of the taxonomic approach may in itself seem to be a taxonomic error. Trees, grass, water, and stones are herein pooled with theories, postulates, notions, and neighbors on the demonstrable basis that we are forever sorting, putting in categories, classifying, legitimately and unavoidably. We choose a pair of shoes; before that we chose the store, and before that we decided to go buy a pair

of shoes instead of weed the garden, sorting articles and events. Those who sort in ways too freakish we call abnormal. The error of taxonomy is not in the sorting. It is in the rationalization of relationships, superimposing on a sorting essential or desirable for convenience, whether by whim or preference, a justification and significance by purported relationships which are improper.

LEAVE TAXONOMY TO TAXONOMISTS

Solid separation of the two approaches will cause a person willing to try it to catch himself up fairly frequently. He will learn to admit that his sorting is usually only that which suits him at the moment, declining flatly to read justification into it. It is hard to believe at times when looking at the students in an afternoon class near the end of a term, but man greatly dislikes to feel that he does not know. He approaches his endless sorting with a sense of importance and introduces taxonomic relationships when he should be saying, "This is the way it is," or, "This is the way it looks to me right now." A little reflection, even by the most objectively trained newsmen or physical scientists, will reveal many instances of the unjustified taxonomic approach in any ordinary working day.

The legitimate taxonomist is a *rara avis*. This statement classifies him but gives him no taxonomic position among men. He contributes not only to his field but to all of us, were we but wise enough to leave taxonomy to him instead of inadvertently imitating him. The illegitimate taxonomist, in biology in which taxonomy is recognized, is a dull quibbler who fosters an improper taxonomic approach around him. Next time you are tempted to segregate into classes, orders, and families, whether it be the family budget or the candidates for presidential nominations, stick to the facts, label your opinions, force them on no one except as such, and assume no false relationships to "prove" that your sorting is the natural arrangement. Next time someone wants to talk about a curriculum or any kindred collegiate or grade school topics, try deciding each issue separately on the basis of right and wrong in working terms. With basic subjects, even the RRR, as the base line, no taxonomic disputant can put over a plausible deal, either reactionary or progressive, so long as all ordinary sorting is acknowledged to be exactly what it is, not often an evolved plan of Fate, Nature, or the Almighty.

Speech for True Communication

Educated at St. Louis University (A.B., A.M.) and the University of Chicago (Ph.D.), Dr. Korf mache r is professor of classical languages at St. Louis University, active in the field of classical philology, and since 1950 editor of "The Classical Bulletin" from which the following editorial is used by permission.

By WILLIAM CHARLES KORFMACHER

Aulus Gellius, purveyor of many an instructive and delightful anecdote, tells in his *Noctes Atticae* (1.10) how the philosopher Favorinus had rebuked a young man for choosing to speak in a language utterly archaic and unintelligible. The youth's purpose, seemingly, was to escape being understood: *quod scire atque intellegere neminem vis quae dicas*, says Favorinus—"because you do not want any one to know and understand what you are saying." And then he adds, sagely, as a philosopher should: *Nonne, homo inepte, ut quod vis abunde consequaris, taces?* "Stupid youth that you are, if you really want to achieve such a purpose, would it not be better to keep silence altogether?"

In our day, there is much fruit for thought in this simple tale. We are accustomed, unfortunately, to hearing language used for the express purpose of deceiving, rather than informing, the auditor. So-called "diplomatic language" often enough strives to attain the goal of ambiguity, to say both "yes" and "no" at one and the same time, and thus to have an escape when an expected line of action proves inconvenient. The language of advertising frequently uses the full skill of trained copy writers to state what is in absolute verbal force true, but in implication far removed from truth.

Beyond this, and far more prevalently, one encounters the student with an almost total lack of sensitivity for his native tongue. English instructors bemoan in college the trials of freshman composition courses. And the general experience of faculty men and women in all courses and departments bears out the validity of lamentation on the part of their colleagues in English. For too many young Americans, accustomed to receiving what they want with a minimum effort of appeal, have never felt an awakening sense of the beauties of their own language, or even a basic

yearning for that brightest of all gems in the linguistic crown—clarity.

It has been said many times, but it should be repeated and shouted from the housetops, that one of the most kindly benefits from a study of the classical languages is a service to the betterment of English. There were villains, to be sure, among the Greeks and Romans; there were those versed in duplicity, who employed the potentialities of language, not to communicate thought but to disguise thought. Yet the innate character and genius of the two languages made for clarity as few instruments of human expression may be expected to do. The simple *μὲν . . . δέ* of Greek, as has so often been averred, pointed a contrast, set off one concept as against another, made one idea clear by showing its difference from a second. Likewise, the abundant use of particles in Greek—often so puzzling to the modern student—aided in elucidating the relationships of thought unit to thought unit, whether by way of contrast, or consequence, or amplification, or whatever other turn the context required.

Latin likewise used its particles, its small words, in the same way. Except for authors who made an objective of brevity—a Sallust, a Seneca, a Tacitus—Roman writers seemed to feel that a particle or expressed connective of some sort was essential to bind a sentence with its predecessor. And the majestic Roman periodic sentence, such as a Cicero or a Livy might write, was a masterpiece of organization: a sentence with a leading and central thought, about which, in varying degrees of subordination, allied but less vital concepts of circumstance, cause, comparison, and the like might be grouped.

No proper study of Greek and Latin, even in rather elementary levels, can escape the fascination of this innate clarity of the classical tongues. Often it seems to defy translation into our own English. Yet rendered it must be, and here something of the value of "Greek or Latin for English" naturally appears. Adroitly used, English is just as sharp a tool for forceful and clear communication of thought as Greek or Latin; and English has riches that neither of the ancient languages possessed. But these older media can aid, forcefully, to a realization of the ideal of today's speech for a true and clear communication of thought.

Two-Year Colleges: Their Promise for the Future

As Commencement speaker for the Community College of Jamestown, New York, Dr. Tread expressed his appreciation of the public mandate for the community college. Former chairman of the Board of Higher Education, New York City, distinguished authority and author in economics and related fields, and popular in university education especially for his challenging and inspiring published addresses, he currently is Vice President of Harper & Brothers.

By ORDWAY TEAD

Both our American aspiration in public higher education and its achievement exceed by far those of any other country the world has ever known. They are a proud part of our unprecedented tradition and of the effort to fulfill it. If those who have criticized our process and our product in public education would look carefully at the achievement in historic perspective, they would surely restrain what is often uninformed, sometimes snobbish, and even on occasion bad-spirited criticism.

Perhaps I can best interpret what I believe goes on by commenting upon the tensions created by a few familiar opposites which, if wisely understood, can tend together to make clear what a community college is, why it is, how it is, and its future prospects.

I have time to mention only a few of these opposites, or tensions, or dual aims, which we confront and have, to some degree, to reconcile if we are to understand the value and future need for the community college. These tensions occur between our desires for an education which is:

- Liberal or general, and vocational.
- Terminal and transfer.
- Local, national, and global.
- For freedom or for responsibility.
- Secular or sacred in its total impact upon character.

But before I elaborate about these, may I stress what *every* college uniquely is and means. It is not buildings; it is not bespectacled older persons trying to make reluctant young people imbibe a variety of knowledge; it is not young people enjoying a pleasant social atmosphere in the

midst of which they postpone the hard days when they must go to work or go into military service.

A college is primarily a collection of carefully selected people, older and younger, dedicated together and cooperatively to search out how life is to be better lived. This better living is defined in terms of the life of the mind and of reason, in terms of feelings and emotions which in their expression are controlled toward personal and social growth, in terms of stronger characters and richer personalities, realizing themselves in the conduct of work, family, citizenship, leisure, and worship.

The contribution of the college—including the two-year college—is to assure the fulfilling of our lives on all fronts. It has already helped, more than any single institution in western society, to elevate competence in business and technology and in all the professional fields, in all the arts, and in the conviction of our people that our life is more than material comforts.

The college affirms that the enlarging of our selfhood in terms of creative beauty, wisdom, and love is not selfish, but is an effort toward human self-transcendence, toward goals of human equality, magnanimity, and creative effort which are given by each to all.

A two-year college has its own special ways of helping to realize this historic goal of American colleges. By way of title, it is frequently called a community college when it is publicly organized, locally controlled, and with a local constituency. It is usually called a junior college when it is an independent, non-profit educational corporation, privately organized, usually more national in its clientele, and in its trustee oversight. Also, the private junior colleges tend to be for one sex, whereas most of the community colleges are co-educational, and minister also to adult groups in the late afternoon and evening. But the basic aims remain kindred to those of four-year colleges as I shall now suggest.

LIBERAL AND VOCATIONAL PURPOSES

My first duality of aim has to do with the carrying forward of liberal or general and of vocational purposes. The central problem here is to be sure that every graduate of a two-year college

will assuredly go out with some grasp of how to conduct himself or herself as a person and a citizen, no less than as a worker. Community colleges are *not* glorified vocational high schools. They are trying to look at the whole person and see training for livelihood as only one segment of the total assignment. Indeed both parents and students have to be more trustful of the educators about the importance of holding both these purposes equally in view. The fact that some graduate may not get a job tomorrow is important, but it is not *all*-important. For the record is clear that with or without vocational courses, those who have to seek work after two years of college are in fact always at work within a few months after graduation, given the will to work and to start at the bottom.

Yet on the other hand, I hasten to add that in a society where sub-professions, semi-engineering, and scientific jobs are multiplying rapidly, it is of course of high importance that our two-year colleges attempt to give those with appropriate aptitudes the added training they need to get their occupational start. And this need should always be seen in some relation both to the local industrial situation, and to the national need for scientifically trained persons. It has to be recognized, however, that many companies have also their own intensive training programs, and national engineering needs embrace more than the ability to labor over a drafting board.

In a word we should not let the good of some intensive training for work stand in the way of the better in terms of advancing the growth of young people to live as democratic, loving, and discerning human beings.

When all is said, work with proper training should yield its own cultural richness; and liberalizing studies, wisely taught, should yield good working attitudes of cheerful persistence, vigor of attack, capacity to think clearly in problem solving, and to work amiably in associated effort. Good working habits, friendly human attitudes, and humane social outlooks are all interdependent. And the education that yields these is a judicious balance of liberal and vocational studies. Preparation for livelihood and for gracious living should go hand in hand. Along with skills, we must nurture capacity for citizenship, integrity of character, and magnanimity of spirit.

TERMINAL VERSUS TRANSFER

The tension in the community college of terminal versus transfer aims has several angles of

student and public concern. Is the student intellectually competent to take on the third and fourth college years with profit and without any lessening of present college scholarly standards? Is the terminal student now qualified to enter adult society as a young adult? Has there been some effort to involve the two-year graduate in terms of his own feelings, motives, and aspirations, to carry forward his own education when the formal compulsions are over?

Is there adequate motivation in the transfer student to assure that on the side of self-propulsion he will gain by two more years of study, assuming they may have to be carried on at public expense through scholarships?

I believe in a generous transfer policy for all students identified as intellectually and motivationally qualified to profit by the longer discipline. I believe in a state system that provides transfer opportunities with greater flexibility than at present, and with scholarship provisions which should be generous on the basis of need. Only thus will we glean and garner from scores of local communities the superior minds who are the rightful candidates for a full college degree, and whose loss of a college education means a personal life that is lived at less than its productive potential for the community.

But we should recognize the need for some public austerity here. There is nothing to be gained by easing a young person by a soft marking system into a four-year college, if he has an IQ of less than 105 and achievement test data below the first quartile in his prior education.

There is no conflict in public purpose between terminal and transfer programs. They are supplementary—each ministering to different needs and to different levels of capacity.

LOCAL, NATIONAL, AND GLOBAL

My third tension of aim has to do with our desire to help the young person be a good American citizen, and at the same time to have also imaginative sympathy with the peoples, conditions, and organizations of a global world. Education does not ask that we love America less, in order to love the world more. It asks rather that we love America more and more intelligently in order to share better in our own world responsibilities.

Thus the mandate upon all education today is to have it set in the frame of some relatedness to the global world. And this relatedness includes our responsibilities toward the local and the national scene, and beyond that to international con-

cerns. No longer is it satisfactory that courses in English, history, economics, sociology, and the rest merely inject some token reference to Russia or China or India or Africa. There has now to be the teacher's reexamination of *every* course to put its overall point of view, its allusions, its acknowledgments of intellectual, cultural, and spiritual interdependence, its human catholicity—all in the context of a world society. Literature did not start with the English poets of the 19th Century, nor history with the Periclean Age. And we cannot expect our young citizens to share sympathetically in the world as actually faced today if we teach only the disclosures of western culture on the arrogant assumption that no other peoples have ever had any glimmerings of genuine culture or spiritual truth.

I find, by way of underscoring this point, in a recent speech of General Romulo at the Asiatic-African Conference in Bandung a few weeks ago, the following sentences which Americans have not merely to read as a part of the record, but to understand in respect to the intention of the utterance, its meaning as to the new and powerful body of freedom-loving eastern states now born into a youth of growing self-assurance and of increasing impact upon American public policy. General Romulo said:

The success of this Conference will be measured not by what we do for ourselves but by what we do for the entire human community. Large as is the cause of Asia and Africa, there is a cause even larger. It is the cause of the human community in a world struggling to liberate itself from the chaos of international anarchy. In short our cause is the cause of man.

Fellow delegates, our strength flows not out of our numbers, though the numbers we represent are great. It flows out of our perception of history and out of the vital purpose we put into the making of tomorrow. If that purpose is stained by resentment or the desire for revenge, then this Conference will turn out to be a fragile and forgetful thing. Let us therefore not seek to draw strength from hurt or heartbreak, but from our common hopes—hopes that can come to life in all peoples everywhere. And if the test of that strength should be our ability to forgive, then let it be said that we were the giants of our time.

In the measure that this noble statement is ignored or misconstrued by Americans, and is not taken full account of in our own foreign policy, this will directly reflect the lag in American higher education in not knowing what to study, whom to understand, and what ideals to be committed to.

We cannot too quickly, at both secondary and

college levels, come to inform ourselves of the yeast and upthrust at work in the so-called "backward" parts of the world. Rather we have to become informed collaborators with all nations possessed of democratic and essentially Christian aspirations as these peoples rise to join us in the struggle for a free world.

FREEDOM AND RESPONSIBILITY

In our society, the claims, desires, and hopes on behalf of freedom are unique, wonderful, and essential. The interpretations of freedom may seem confused. Too often it is thought of in terms of the individual being free *from* something—from law, monopoly, moral restraints, or hard work.

College education has a major mandate to interpret American freedom in quite other terms. Freedom has to be accepted as the obligation *toward* certain indispensable conditions of human fulfillment. When we freely desire to obey well-conceived law, to comply with long-established moral decencies, to work hard in order to achieve greater mastery, then we *are* free. When we voluntarily agree to take on responsibility for family life, for thorough workmanship, for public service, for cultural enlightenment—then too we are free in the only noble sense. The whole heritage of American freedom means the opportunity for more and more persons to realize their selfhood at higher levels of transcendence—at levels which rise above the trivial and the selfish, "till thou at length art free" as a good American poet said.

What we deeply need in college graduates, and what every dedicated teacher tries to make appealing to them, is the sense of being gladly free, in their own free-wheeling, to take on the responsibility for their own good character, for personality growth, for civic usefulness, for a searching of their own souls toward elevating their spirits toward the stars.

When such a sense of freedom through responsibility has not been aroused, when a student believes that morally, politically, and in business it is each man for himself and get away with doing as little as possible, the college has failed ignominiously.

I say with all earnestness to both faculty and students, that if you have not examined and held conversation together about the deep meaning of freedom in our great trilogy of liberty, equality, and fraternity, you have avoided considering why our American nation is what it is, and why, beyond our economic success, we still deeply desire

to be friends at home and to share the fellowship of a larger community abroad.

SACRED OR SECULAR

My final point has to do with what I regard as the essential passion of democracy—and by passion I mean both depth of natural feeling and with this a commitment to suffer if necessary in the service of the cherished and the ideal good of personal fulfillment.

The issue in our extraordinary society which presents itself in its simplest yet subtlest terms is this: can we use the material standard of life which we are privileged to enjoy as that standard rises on the side of dollars and delights, and at the same time keep our integrity of soul, our individual creativity of spirit, and our generosity of human compassion?

What indeed do we regard as the integrity of soul beyond the amplitude of our pocket-books and the pleasantness of our social amenities? Will we be corrupted by our comforts and our leisure? These are questions which have to be faced, both because of their reality and because they are being raised about us by less sympathetic peoples from beyond our borders.

For two ways of attacking life are today clamoring for human loyalty. The issue is thus admittedly over-simplified because life's choices are rarely on an either/or basis. But the choice between two alternatives seems obvious and urgent to the deprived, desperate, and aroused peoples in the far corners of the globe.

The one way is the way of materialistic and economic cause and effect. The position here is that folks have little or no control of their human destiny unless they ally themselves with economic powers which can promise material salvation as of central importance.

The other way is that which is in the great tradition and heritage of human aspiration, as voiced by wise men even before the Christian era, and in parts of the world now being insulted as "backward." All of this prophetic utterance has been unanimous in its insight that this is not man's world alone, that the things which are seen are temporal, and that it profits a man little if he gains the whole world and loses his own soul. These wise insights have further affirmed that we are here on sufferance; that it is not man's world, but God's world. And this has been deemed to be true even if we have to profess the eternal mystery of life and of God.

We thus have the right, I believe, to affirm the

sacredness of the unutterable and of that sense of a pervading dignity and holiness in the human career, which can be affirmed and lived, even if it cannot be proved. We have the right to ask for the joining together of knowledge, of a growing sense of scientific grasp, of the unknown as requiring our loyalty to law and order and love. Because we have this right, we believe in education and we believe education is basically spiritual in purpose and is pursued for spiritual ends—that is, ends which seek depth and nobility for each human spirit in its upward striving.

Do not mistake me. I am opposed to public colleges having any connection with religious denominational loyalties. The separations of church, state and public education in any corporate way are a great achievement of our society.

What I am rather saying is that in the interest of the strengthening of democracy, in the interest of the deepest appeal to persons to be moral and to be dedicated to righteousness, we had better confront our human situation today and ask if we have the courage, knowledge, and faith to go it alone. In short, is man strong enough for himself and his own best good in terms of accountability, authority, support, and inspiration? My answer to all these questions is *no*. And without being in any way sectarian, public education—properly pursued—can be infused with the assumption of and commitment to spiritual and holy ends in living. It can be permeated with this sense of the divine dignity of man not by indoctrination but by the persuasion of the vision of greatness which teachers are charged to place perennially before idealistic young people.

A FINAL WORD TO GRADUATES

By indirection throughout this talk I have been speaking to you graduates who occasion our being together here, and I have said these things:

- I have said that your education should hopefully have gone beyond technical training in the interests of your minds, hearts, and souls, in the interests of your awareness of what it means to desire and to lead the good life.
- I have said that whether you are a terminal or a transfer student you should have gained the realization that there is still much to learn, and that education has in fact to be life-long.
- I have said that unless you have gained some sympathetic sense of your organic relation to those in this world of different nations, colors, creeds—you are in danger of being political isolationists and spiritual snobs.
- I have said that I hope you have come to understand that the only American freedom worth preserving is the freedom to be responsible for

The Scholar Must Also Teach

Is it not reasonable to expect the scholar to have skill in his teaching as well as in his research? Research is the pursuit of truth, and what takes place in his classroom and in the minds and personalities of his students is a form of truth. A young man who is instructor in English at the University of Utah here points to the need for emphasis on the development of teaching skill by the college or university teacher. A graduate of the State University of Iowa (B.A., M.A.) and now a candidate for a Ph.D. at Columbia University, he has taught at Upper Iowa University, at Drake University, and on a part-time basis at Columbia.

By KENNETH E. EBLE

As a teacher who interrupted his graduate work to teach in a small college, who later returned to the scholarly air of the graduate school to complete his Ph.D., and who is now back teaching, I have been struck by the vast gap which separates the graduate school scholar from the college or university teacher he becomes. I experienced the shock of readjustment three times: once as a neophyte instructor standing before my first class in literature, again as a student returning to the mysteries of the graduate seminar, and once more as a teacher trying to reconcile literary theory to freshman reality. I am certain that most college teachers thinking back upon their early

Two-Year Colleges—continued

the improvement of our individual and social life on wider and deeper fronts. We are free for one thing—to become more fully ourselves and to understand our world more deeply. For myself I have to add that we are free to be ourselves as sons of God.

Hence my final point is that the community college joins with all other colleges in helping to interpret to an eager, bewildered, and thirsty world the truth that the life of the spirit rises above material concerns and material well-being, and that we may be co-workers with a Creative Power beyond ourselves.

My message is thus affirmative. Courage and faith—love, compassion, and wonder, these are most needful. *And colleges are dedicated to these virtues.*

teaching days will recall similar experiences. Unfortunately, this shock of scholar becoming teacher is one for which the graduate school inadequately prepares its graduates.

With only his Ph.D. degree between him and the formidable rows of undergraduate students, the new addition to a college faculty begins his teaching career. For four or five years or more he has read, contemplated, discussed, memorized, and otherwise satisfied the requirements for his academic degree. The further he has progressed in his field, the more specialized his study has become. He has worked himself further and further along a narrowing corridor, which suddenly enlarges into a room filled with restless students and the echoes of his last remarks. Instead of familiarly debating recondite scholarly problems with fellow graduate students, he is lecturing to a group whose interests, enthusiasms, and ambitions he only faintly remembers. Instead of conducting an intensive study of medieval allegory, he must span eight or ten centuries in two semesters. Instead of the concentrated effort to master a vast and detailed subject matter, there is the pressing necessity to communicate part of that knowledge in a form which can be understood by young and undisciplined students. Perhaps for the first time he realizes he has passed through his entire program of professional preparation without concerning himself with how to teach.

Thus, it is not surprising that many undergraduate classrooms, after the first days of curiosity and registration, are filled with empty chairs or yawning minds. The undergraduate, with his rather vague idea of what both he and the instructor are doing there, is a harsh critic. He is quick to notice and react to things which bore him or confuse him or prevent him from doing what he wants to do. The good teacher works hard to overcome this resistance and tries to replace it with enthusiasm if possible, or at least with attention and consideration. But the new faculty member, trained as a scholar and thrust into a teaching role, may lack the skills of the good teacher and the stimulation to develop these skills.

The scholar turned teacher is aware that he must possess a wide and penetrating command of his field; but few degree programs suggest to him the importance of effectively communicating that knowledge in the classroom. It is in this com-

munication which is essential to good teaching that the scholar most often falls short. It is in the actual teaching skills that the graduate school fails to prepare its future scholars and teachers.

This aspect of the graduate school program has received some harsh criticism. *The Report of the President's Commission on Higher Education* (Vol. IV, p. 16) states: "The most conspicuous weakness of the current graduate programs is the failure to provide potential faculty members with basic skills and the art necessary to impart knowledge to others. College teaching is the only major profession for which there does not exist a well-defined program of preparation toward developing the skills which it is essential for the practitioner to possess."

The advanced degree programs in most graduate schools, especially for the Ph.D. degree, which is becoming the minimum requirement for a college faculty member, are predominantly programs of scholarship. As stated in a typical graduate school announcement: "The principal aims of graduate study are the development of intellectual independence through cultivation of the scientific, critical, and appreciative attitudes of mind, and promotion of the spirit of research." The Ph.D. degree in English at a major midwestern university includes these four points as essential for the granting of the degree: "(1) reasonable mastery of the field of specialization, (2) compliance with the language requirements, (3) presentation of an acceptable dissertation embodying the results of an original investigation, (4) passing of a final oral examination upon the dissertation and the immediate field in which the investigation lies." The student can pass from undergraduate, take his M.A. degree, and receive the Ph.D. degree without giving any time or effort to his development as teacher. And, although he cannot, in many states, teach in primary, secondary schools, or junior colleges, he can take his place as a university or college faculty member without any attention having been placed upon the important duty and responsibility of teaching the subject he has so zealously mastered.

The profession itself reflects the aims and achievements of the graduate schools. A crowded schedule, which continually holds the unfulfilled promise that next year will be better, oftentimes forces the faculty member into a choice between concentrating on teaching or research. In terms of professional advancement, research as embodied in the scholarly articles and books the faculty

member has had published, is more remunerative than a devoted effort to improve teaching skills. Then too, the initial enthusiasm for the challenge of the classroom may turn into apathy and dissatisfaction with undergraduates who cannot appreciate the highly specialized interests of the research scholar.

In addition, the professional stimulation to improve teaching skill is unfortunately lacking. The scholarly journals the faculty member must read seldom contain articles concerning the teaching side of his life. The scholarly book is a rare exception if it makes teaching its concern. Among the professional organizations he may join, there is none devoted specifically to the problems and interests of college and university teaching. In short, within the profession itself, pressures adverse to teaching and an absence of emphasis upon it, do little to stimulate interest in the teaching skills and responsibilities.

Without condemning either the graduate schools or the college faculties, who are already functioning under a great number of pressures, the graduate program and the scholars it produces can bear some examination. The scholar certainly shrinks from the idea of turning the graduate school into another branch of the teachers college; and even the most efficient teachers college must realize that a curriculum of education courses in the graduate schools would not guarantee the production of good teachers. Gilbert Highet, a superb example of scholar and teacher, calls his book *The Art of Teaching*¹ because he believes that teaching is an art, not a science, and therefore, something which cannot be reduced to scientific principles and methodology. Yet his book attests to the fact that teaching as an art does not mean that there are not experiences which the mature teacher can share with the coming teacher. The sharing of these experiences, the stimulation of thought about teaching as well as about scholarly problems, the opportunity to develop the love, respect, and skills of teaching, are things which a graduate school could do without becoming either a school of technology or a scholar's retreat.

Among graduate schools which have taken steps toward producing the scholar-teacher are Princeton and the University of Michigan. The University of Michigan offers a special Ph.D. degree in English and Education, "designed especially for those students who look forward to teaching in institutions of higher learning and plan to offer

¹ New York, Alfred A. Knopf, 1950.

THE SCHOLAR MUST ALSO TEACH

academic courses in English language, composition and literature." This degree requires a longer period of study than either a degree in education or in English. Briefly, it includes the usual Ph.D. degree English program with cognate courses in education, and places primary emphasis upon the teaching of English and the problems involved rather than upon research. The dissertation for the doctor's degree is written in the field of English, but may deal with a pedagogical problem. Michigan has a similar program in the history department.

At Princeton, the English department in 1951 began a program which emphasizes the role of teacher. As the department announcement states: "Graduate instruction in English is designed to train students to be at once productive scholars, sympathetic and intelligent critics of literature, and good teachers. Courses given on the graduate level are intended to give a student training in these spheres of scholarship, criticism and teaching." Such a statement could well serve as a model for the graduate school which desires to produce the scholar-teacher. The Princeton program requires of its Ph.D. candidate, "general knowledge of subject . . . acquaintance with scholarly methods of research . . . and power of organizing and presenting his material." The final oral examination for the doctorate places special emphasis on teaching qualifications and includes a lecture prepared by the candidate for undergraduates, and questions on the problems and techniques of pedagogy.

In 1950 the graduate school of Oregon State College inaugurated a minor in college teaching which was the outgrowth of a seminar and other activities in college and university teaching extending over a much longer period. The minor is open to students in all fields of specialization and requires as prerequisite only graduate standing, maturity and sincerity of purpose, and approval of the major department. After three basic graduate courses—the College Student, College and University Teaching, and American Higher Education—the student takes two courses—a Teaching Procedures Seminar and College Teaching Studies—in which a faculty member of his major department supervises closely his studies in practical aspects of teaching. Candidates for the Ph.D. may add electives in the minor. The teaching minor does not interfere with the candidate's major or first minor which are taken in the usual

fields of graduate specialization.

These are all recent developments and are exceptional in displaying a concern for the scholar who must also assume the role of teacher. A few other universities are attempting such programs and others may follow, but the great majority of graduate schools continue to pursue the traditional pattern of graduate study which concentrates upon the scholar and leaves the development of the teacher to individual inclination, adaptation, and chance.

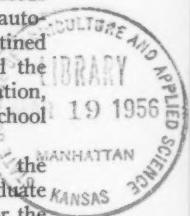
Perhaps most of all, the graduate school needs to recognize that the good scholar is not automatically the good teacher. Neither is he destined to be a poor one; but both the scholar and the teacher are the products of guidance, stimulation, training, and discipline which the graduate school can, in part, provide.

In providing for the development of the teacher side of this dual personality, the graduate program should broaden the opportunities for the scholar who is interested in teaching as well as in research. The field of degree dissertations could be widened to include pedagogical problems coupled with scholarly investigation. The degree candidate could be expected to develop teaching interest and skills and to be examined on his ability as a teacher as well as on his scholarship.

Both the graduate school and its students might benefit from a conscious emphasis upon teaching. The pressures of large classes in basic freshman courses have forced many graduate schools to increase the opportunity for teaching fellowships and graduate assistantships. In turn, the large number of these inexperienced teachers has made it necessary for departments to conduct some kind of in-service training. The impending avalanche of students upon colleges and universities may do much to direct the efforts of the graduate school to producing competent teachers.

Regardless of what specific steps are taken, a foremost aim of the graduate program should be to produce scholars and teachers who will continue to practice, develop and stimulate improved teaching in the field of higher education. The graduate school can be an effective bridge between the gaining of knowledge and the communication of it. The product of the graduate school and the member of a college or university faculty should be ultimately like Chaucer's "holwe clerk of Oxenford,"

"And gladly wolde he lerne and gladly teche."



Why Do I Lecture? Why Do I Use Discussion?

The entire October 1954 issue of the Journal of General Education was devoted to a "discussion of discussion" by Justus Buchler, Theodore M. Greene, Albert McHarg Hayes, Oliver S. Loud, and Joseph J. Schwab, with editorial comment by Edward Rosenheim, Jr. By courtesy of the Editor of the Journal and the University of Chicago Press, the following article (somewhat condensed) is presented with the hope that our readers will read the entire symposium. The author, who has approved the article in its present form, is a graduate of Harvard with advanced degrees (A.M., Ed.D.) from Columbia. For four years he was on the faculty of Sarah Lawrence College, served the Tennessee Eastman Corporation at Oak Ridge 1939-43, and since 1943 has been at Antioch College where he is professor of physical science.

By OLIVER S. LOUD

My own conviction has grown that the objectives for general education, whenever well defined, indicate that the well-conducted discussion rather than the well-presented lecture should, in most courses, become the more frequently scheduled procedure.

It has become difficult for me to imagine a less promising method of communication, teacher to student, than for the teacher to deliver, however ably, a more or less uninterrupted monologue, for a little less than an hour, to an array of students who more or less attentively listen, take more or less faithful notes, for more or less educationally valid reasons. Without what communication theorists call "feedback" from his students, the lecturer is proceeding on the most precarious assumption that most, if not all, of the "participants" are moving intellectually with him, together, step by step, through his argument.

Let us assume that there is good reason for each of his students to do just this. The lecturer, then, is not merely expanding each topic in a detailed syllabus into a complete sentence; nor is he reciting what any student can read for himself, at his own rate, in some adequate text. The student feels that, unless he participates to the extent of attentive note-taking, he is missing a part of the course that is difficult, if not impossible, to "make up" (and incurring the risk of an unsat-

isfactory performance on some examination to follow).

Assuming all this, I think that a glance through a random selection of student lecture notes would quickly disillusion the lecturer. (See the memorable sample revealed by the humorists, Anne Cleveland and Jean Anderson, in their pamphlet, *Everything Correlates*, published in 1946 by the Vassar College Cooperative Bookshop.) Indeed, I am convinced that very rarely in lecture situations do more than a few persons listen nearly so carefully as a responsible lecturer puts his words and sentences together. The student's involvement is not likely to be sufficient to sustain more than an intermittent attention span. And the lecture situation is not perceptibly affected by the level of his participation.

WHY DO I LECTURE?

Why, then, in my courses do I continue to bring my students together into the lecture room for a scheduled hour? First, I think of administrative reasons: reaching a common understanding of the purposes, conduct, and requirements of the course; initiating a unit of study that will extend over several weeks; summarizing and reviewing such a unit when it nears completion; giving examinations; and the like.

Then I think of certain experiences that a large group can effectively share: demonstrations that do not lend themselves better (as many do) to small-group observation or that are too expensive to repeat for subgroups of the course; an audio-visual aid, such as a documentary film—to be discussed on some other occasion; a panel discussion or a series of student reports; a guest "expert" who should not be asked for "repeat performances."

And, finally, I must admit that I continue to give lectures myself when my convictions would recommend the conduct of small-group discussions—(1) because my academic load permits me to go only so far in the direction of subdividing my large classes into discussion hours outside those hours provided in the official schedule and (2) because I have a greater security as yet in my long experience with lecturing than in my more recent experiences attempting to conduct the kind of discussions I believe desirable.

Critical though I have become of the lecture and its supposed consequences, I do have certain limited expectations for the lectures that are given in my courses. Principally, I expect the student to be *affected*. I expect the personality of the lecturer to make an impression that reading the lecture in article form would not make. I expect the student to witness a distinctive competence and a distinctive commitment to a particular intellectual undertaking. I want the student to recognize a scrupulous use of technical language and some uniquely significant selection, emphasis, and organization of problem material. I hope that the student—if he is, in fact, led step by step through an analysis—will experience a reassurance that the problems and procedures of this science are, after all, intelligible. (I am particularly delighted if the lecture turns out to be a discussion, so that the student is invited to share more actively in the achievement that takes place.)

But experience has led me to recognize some of the inherent limitations in this procedure and so to identify what can *not* be realistically expected from it. After all, the student's participation is somewhere between fully passive and fully active. It is one thing to follow a lecture (or to read and reread a text) attentively, concurring step by step in the argument. It is an entirely different thing to assume the role that the lecturer (or writer) has carried: to attempt to reconstruct—not by routine imitation—the argument, orally or in writing, for another person or—even more difficult—to proceed from the argument to some "original" or "corollary" application of it.

WHY DO I USE DISCUSSION?

For the more rigorously defined objectives of a course that belongs in a coherent design for general education, the scheduled class hour should, more frequently rather than less, exact a more active, more sustained intellectual effort from the student, of a quality that can be achieved, in my judgment, only within the context of a well-conducted, intimate discussion.

In a friendly and informal association, teacher and students, one with another, the opportunity is provided for the student to be assisted to grapple, often painfully, with the problem material currently in use. The student would need to learn to expect and to value the sharp but friendly criticism of his peers and of his teacher, alternating with his attempts to make precise and effective use, in words, of the concepts and relationships that have proved fruitful or promising in the par-

ticular discipline. Learning from such criticism, in the multilateral and repeated dialectical process, he can master the material, making it his own—to share with others and to use creatively. He would abandon perhaps in time the immature tricks of *memoriter* learning, of "cramming," of unimaginative imitation of text or lecture. He would no longer flinch from an intellectual challenge to which he had been led but would be guided through the experience that no one else can do for him: for instance, reasoning from the empirically established laws of chemical change to the "necessary and sufficient assumptions" of Dalton's atomic theory and back again, or thinking through with precision the shift from the Aristotelian to the Galilean view of motion.

There are many implications of any shift to greater reliance upon active discussion. I shall select only a few to mention.

- ▶ Conceding and appreciating all the progress made in recent years in the techniques of test construction, it would seem that no array of multiple-choice items could fully replace either the oral cross-examination or the free-response written essay type of examination question.
- ▶ Sensitivity to the particular problems of each individual student in the small-group discussion would be consistent with individualizing a generous share of both library and laboratory investigation.
- ▶ The needed leisureliness of the discussion procedure will reinforce the tendency to deal rigorously and intensively with a selected few problems during a course rather than superficially with a conventional array of topics.
- ▶ The successful discussion hour will have been responsibly prepared for by all participants. It will have clearly perceived objectives. It will have an evident structure, however flexibly the leader adapts his performance to unpredicted developments.
- ▶ The skilful discussion leader will have mastered the self-discipline of keeping silent fully as purposefully as he formulates a question or criticism. How often have I not spoken (or observed another teacher speaking) what some student in the circle should be saying in his particular way! How often have I not fallen back (or observed another "discussion leader" falling back) into repeating excerpts from some previous lecture—the students acquiescing because they, too, were flinching from sharing the initiative with the teacher, hoping to learn to imitate the teacher's performance for the temporary purpose of writing an approaching examination!

The hard, basic educative effort must come from the skilfully conducted discussion that rests an active responsibility for working precisely with ideas where such responsibility has to rest—with the individual student, reasoning aloud in a circle of helpfully critical friends.

Between Periods

What does a professor do between periods? Sometimes he is too fatigued to do much of anything. Sometimes, like the banquet speaker driving home, he has some of his most brilliant flashes of wit, too late for his audience. Sometimes the exercises of the classroom have stimulated his brain and he is fitted for some of his best thinking. We are here to think of Dr. Withers, English and foreign language professor at Virginia Polytechnic Institute, giving some of his detached thoughts on many topics that have come to his mind at such times.

By A. M. WITHERS

● The Good College President . . .

A writer has consumed thirteen pages listing and proving principles of correctness in college executives. Why not simply say: We can do without the wonder-working, all-understanding politicians in such offices, the little men with the Jehovah-complexes, the academic Hitlers with their spies and informants, the ground-floor type that identifies itself with the institution, and hires and fires from petty, personal points of view. We need educated, public-spirited gentlemen as college presidents. The matter is as simple as that.

● Football and Education . . .

The University of Neviana wins a glorious football victory down in Florida. The eyes of the citizens of Neviana light up. But what connection do events like that have with higher education, and with the prevention of dilly-dallying and disastrous multiplication of courses in the high schools?

● This Too Will Pass . . .

A great deal is being written about our storm-tossed time, as if other eras had not seemed just as unstable to those who witnessed them. Many today even appear to take a certain pride in the idea that we live in an epoch of unexampled change and confusion. It is always something to break a record.

The attitude of the Chinese or Russian peasant, who plods on unheeding war's alarms, is better. He at least is aware every moment of the day that there are fundamentals that do not change with the politics of men and nations, and that life, even in times of peace, is for every one more or

less a "fitful fever." He knows, as well as fate-driven Aeneas, that "this too will pass."

● Let's Be Better Subscribers . . .

Why is it that a teacher will spend tens and hundreds of dollars a year on trips to professional gathering places, while refusing to sustain with his substance the publications which voice the best thought and furnish the completest information and stimulation in his field?

● Education's Lost Causes . . .

The fighters of education's lost causes, lost indeed before battle is joined, are those who think of education as helter-skelter exposure to the things of today and tomorrow only, who boast of bathrooms and motorcars as evidence of national mental and moral superiority, who would create a social Utopia by calling everybody by his first name, who see little or nothing in modern-foreign-language study but the "parley-voo" business, who adore the *Digests* as the guides and regulators of literature in the schools, who believe that Rome could have easily been built in a day if the Romans had had gasoline and bulldozers—who in sum spend their time preaching against that vicious thing called *discipline* while the country's youth merrily plays its brains away.

● Foundation for writing . . .

Having no passion through solid learning for our language, very many even of the so-called educated do not genuinely love their own literature, though they may blithely presume to teach it. Furthermore, in the absence of precise word knowledge, will for intelligent and forceful composition, and understanding of style, teachers like other men and women are not going to accomplish much good reading, and especially not much good writing.

● Order and Language . . .

"Order is Heaven's first law," said Alexander Pope. A Physical Geography of many years ago made it plain that "there is order and law, harmony and design, in every part of the terrestrial machinery."

But ultra-progressive education, with its ultrahustle-and-bustle, its multiplicity of required subjects and external attractions in the high schools, has upset those principles of order in the knowl-

edge of language, primary element in all learning, and there is not a great deal that can be done, educationally, or shall we say culturally, until we get back to them. Without order in language nearly all the cultural purpose of education disappears.

● A Consideration of Pith and Moment . . .

Most of the writing of the present day in America, though it usually contrives to get its meaning across, is undistinguished to say the least. It is largely the product of people who think they know English, but who unfortunately do not, because, paradoxically, English is the only language they know.

Between writers schooled in more than one language and those who can claim knowledge of only one there is the same difference (usually, of course, not always) as between a fine and commodious automobile and one designed only for transportation without regard for comfort and convenience; or it is the difference, as I am not the first to suggest, between a capable musician and one who can play in only one key.

● Which Shall It Be? . . .

I have two well formed, but mutually antagonistic convictions, as follows:

► More people, provided they have some ripeness in language, should try to write. It is possible to read one's self dumb; but the effort at writing is the saving discipline, because it leads, however painfully, to inner clarification of one's ideas. As Donald Adams says, a thought is not a thought until it is written down, and it is not written down until it is printed. Editors shake their gory locks in dread of more hundreds of amorphous manuscripts crowding upon their desks, but should be willing, in the interests of the general good, to treat them kindly, if firmly.

► Writing involves travail; and so much of it is futile, here today, buried tomorrow, never to know a resurrection. The writer sits in his dusty room grinding out matter for print (about much of which not even the immediate world has any lively concern), meanwhile becoming unfit for companionship with his wife, his children, or his dog. For the last I reserve a special pity.

There is so much that is beautiful that might better occupy the attention of those without a very special talent for the pen, or without ideas that the world will not willingly let die—such

as good reading, cultivation of a garden, planting and care of flowers and trees, interest and participation in art and music, and communion with good friends.

● The Spoor and the Quarry . . .

"Words are the spoor that guides the hunter, but the quarry is the matter of ideas, human character and historical circumstance." (Professor T. H. English.)

Very well said! But doubt intrudes that it is up to the professor of English or of any other language to feed his charges analyses and interpretations with a spoon. Ideas thus propagated *en masse* go in one ear and out the other when the receiver has not the language knowledge and the language feeling to enjoy, in the solitude of his own mind, the good life that is in literature. To hear some professors of English, one would imagine that they take upon themselves the whole burden of dissemination of ideas, whereas of course all fields of endeavor share in the great responsibility. The main problem in English is always how to teach the language, that is, to see thoroughly to the "spoor that guides the hunter." There will be no question thereafter of the finding of the "quarry."

● Teachers, Students, and Consciences . . .

High-sounding adjurations to teachers are the order of the day in our country. Articles and addresses, "softly lucent as a rounded moon" to include every possible virtue, belabor them constantly. Little is said about the crying sin of lack on the part of students of feeling of responsibility for their lives.

The Golden Rule should be enough to take care of the necessity for keeping the self-starters working in the case of teachers. And as for students, we are assured that a conscience is implanted in every normal individual, needing only to be kept awake by inside and outside agencies.

● Language and Music . . .

Our American students of music are for the most part disconcertingly indifferent to the native languages of songs. Somehow they fondly imagine themselves able to sound the depths of the inner emotions of music's authors without intimate regard for the vehicle of their thoughts. With all the might of their immaturity and provinciality judging instrumentalists solely on fluency, and vocalists on mere color and range, these imperfect amateurs envision technical or mechanical difficul-

ties as the only great obstacle to full success in musical careers, and are not inwardly qualified to adapt interpretation to the spirit and substance of music that reside in the language through which these were called into being.

● Plumming vs. Plumbing . . .

Our average citizen can hear over the radio "I could never tell another I belong to *them*" without being offended; or he can read in the bus the placard, "The driver must have *unobstructable vision*," without batting an eye. And he has such slight interest in the connection of language with literature that he can hear "We have come to the parting of love's drifting sand" (might have been *shifting*, but that is too high-brow) without inquiring into the nature of the picture presented to the mind's eye. A *simulated-diamond* ring must be something very precious, even if it costs only a dollar and sixty-nine cents plus c.o.d. charges. A certain skin lotion *avoids* blemishes from developing. A certain toothpaste has a cleansing effect *built* right in. These things are all right even with most of the American "educated" public. The next step will be *plumming* for *plumbing*. In fact this has already occurred, in bright yellow lettering on a new red truck.

● By Indirection Find Direction Out . . .

A university official berated a foreign-language-minded audience on its insistence that knowledge of English alone is not sufficient for the needs of English. Said he: "If I want to go from New York to New Orleans I don't go around by Denver."

That is a false and misleading analogy. A true one lies in imagining English a fort to be captured. Obviously, if any other procedure is possible, the soldiers do not drive exclusively straight ahead at the objective. That method is to pile up the dead and dying. The attack is made on the flanks or from the rear, as well as simultaneously from the front.

Or suppose one undertakes to convict a criminal. It is not alone by a violent head-on approach that one proceeds, but rather by lining up all the discoverable details surrounding the case.

English is in itself a sturdy and substantial food. So is corn bread or fat bacon. But the mixed diet, physical and intellectual, is the best in the long run.

No language is as composite as English. None is as demanding of perspective that comes alone through the study of mother and sister languages.

● Our Way With the Language . . .

Students are pouring into colleges in an unmade and unmakable condition in language ways. They falter and break lines in the presence of literature and foreign tongues. They are no more adept in business letters or in technical reports than they are in correspondence with the girls they left behind them—who in turn are quite well satisfied with epistolary thinness.

● "Cultured Gentleman" . . .

A lady of my acquaintance has just remarked of a certain man that he is "a cultured gentleman." His training and experience have doubtless impressed her, and particularly also his graces of conversation and other evidences of tact and delicacy. As she makes no pretensions to learning, however, she can hardly have gauged the extent of his intellectual curiosity, surely a requisite in all cultural aspiration, and thus her appraisal, though fraught with kindness and reflecting credit on herself, lacks authority.

● Logic Will Always Be Logic . . .

Brains and personality will "out." They will "out" the more propitiously if fed in the good ways tested since the Middle Ages. Times indeed change, but not the laws of mental development—knowledge of facts, with accepted responsibility on the part of the "knowers" to institute and constitute thinking therefrom.

● For the Plastic Years . . .

In the sense of concentrating on a few attainable necessities for everybody, supplying them all with the tools and skills required for their own self-education, I am for an instruction that could be called general, or even universal. But only in this sense.

Why will educators not realize that we cannot have everything in the high schools; and that anyhow many things of importance can be learned elsewhere than in school? Why do they not cultivate, in place of their too tragic sense of life, a saving comprehension of the humor in the human dispensation that should whisper to them: "Let us give the young brain in school the best we can in available time in the world-accepted tools of education; then relax, and await results."

What we need, in other words, is accelerated production of independent, self-developing, self-responsible, men and women—men and women who have not, in their plastic years, been fed with spoons.

"Reflections of a Physicist"

REFLECTIONS OF A PHYSICIST by P. W. Bridgman. New York: Philosophical Library. 1955. xiv + 576 pp. \$6.00.

As a mouse may look at a king, an ordinary professor who is neither physicist nor philosopher may behold in this second, enlarged edition of "Reflections of a Physicist" a great scholar thinking on the problems of man—within himself, among his fellows, and in the cosmos. Dr. Bridgeman's research writings by their nature can be shared in their fulness only by specialists, but any thoughtful reader may here follow him in his creative thinking, expressed modestly but with conviction.

Basic to the thinking is the way of thinking which the author entered upon about thirty years ago: operational analysis. The essence of the attitude, he says, is that meanings of one's terms are to be found by analysis of the operations one performs in applying a term "in concrete situations or in verifying the truth of statements or in finding the answers to questions." The operational approach gave him a new way of handling his mind. None of the papers that make up the book, he declares, could have been written before he became operationally self-conscious.

He exemplifies operational analysis in his point of view and his mode of expression. He not only advocates a linguistic technique of the first person, but he also practices it; he reports, not what others think, but what P. W. Bridgman thinks.

His thirty-two chapters are grouped under five sections: general points of view, applications to scientific situations, primarily social, specific situations, prophetic. The chapter titles in the table of contents give a better clue to the content than does the index, which is confined to names.

A place for a professor to dip into this book is chapter 30 where the author laments the degradation of his fellow physicists and other faculty colleagues. "In many universities the rate of salary increase has not kept pace with the increase of differential taxation, so that the take home pay is actually less than it was fifteen years ago. What this means with our depreciated dollar is all too evident." He has witnessed with dismay the complacency and acquiescence of faculty people in the situation.

He deplores also the disposition of intellec-

tuals generally to hold back at a time when a new age has suddenly begun:

. . . from the long-range point of view it is important for *everyone* that unusual ability, so long as it is accompanied by social responsibility, be cherished, encouraged, stimulated, and given any special treatment necessary to induce it to produce to capacity. The intelligentsia are in the best position to urge this point of view, because they know best how rare true ability is, and how important for progress. Yet the intelligentsia have shown a curious reluctance in coming to this point, or at any rate have not been able to bring themselves to push the matter. The reason is human and understandable enough, for it is the intelligentsia who possess the ability they are lauding and who will receive the special privileges that may result from it.

The place of the intellectuals in the current crisis is of foremost concern to Dr. Bridgman. Relativity theory and quantum mechanics have made an impact "the most momentous that has yet occurred to human thought." It is getting late, he says, and we must hurry. Physicists have a contribution to make apart from the new physics itself:

The race will not save itself until it achieves intellectual morale. Perhaps the two chief components of intellectual morale are intellectual integrity and a fierce conviction that man *can* become the master of his fate. The physicist is peculiarly likely to possess the two components of intellectual morale. A lifetime in the laboratory, struggling to make things work, has shown the inexorable need of intellectual integrity. And as a participant in the one most successful enterprise of the human race to date, that is, the technological mastery of nature to the extent achieved by modern physics, he is in a peculiar position to have won the conclusion that not only is there no substitute for using one's mind, but the problems which confront us are soluble and soluble by us. If physicists will only make others see their own wider vision, their ultimate influence will far transcend that of any possible technological contribution.

He says that "perhaps the single most drastic revision in point of view brought about by the operational approach" was "an altered appraisal of the role of the individual." He thinks of himself as individual standing "alone in the universe, with only the intellectual tools I have with me."

Bridgman stresses the individual man as the human unit. He thinks of science as private (for each man) first of all and public afterward. He

BOOK NOTES

DICTIONARY OF EARLY ENGLISH by Joseph T. Shipley. Preface by Mark Van Doren. New York: Philosophical Library. 1955. xiii + 753 pp. \$10.00.

A handsome and delightful volume. Discussions of words from early English authors, including "the most interesting, informative, and revivable English words that have elapsed from general use." Example: *cacography* meaning "bad handwriting" and "bad spelling." Might not such a word find use in a time when it is claimed that Johnny can't spell, can't read, can't write? Besides the main contents from "adorn" to "zymurgy" filling 741 pages, the book contains excellent bibliographies and appendices on Greek and Latin words. Let no one think that, because this is a dictionary, it will be dull. The author has a sense of the function of words in serving the human spirit; he also has a sense of humor which shows throughout.

DICTIONARY OF NEW WORDS by Mary Reifer. Introduction by Eric Partridge. New York: Philosophical Library. 1955. ix + 234 pp. \$6.00.

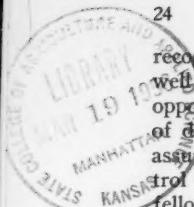
All new words of the past few decades presented with scholarly accuracy. Can be read for profit and for use, or for pure pleasure. For example (from a single page) : Do you know what an "angle of yaw" is, or an "Annie Oakley" or "anoxia"?

THESE BOOKS WERE STIMULATING by Delmer M. Goode. Corvallis, Oregon: Oregon State College Graduate School. 1955. 13 pp. plus heavy paper cover. 35¢.

Seventy books on college and university teaching with annotations by faculty and student members of a seminar in college and university training.

YOUTH'S OUTLOOK FOR THE FUTURE by James M. Gillespie and Gordon W. Allport. Garden City, N. Y.: Doubleday & Company, Inc. 1955. ix + 61 pp. 85¢.

Attitudes of college students in United States, New Zealand, South Africa, Egypt, Mexico, France, Germany, Italy, Japan, Israeli. "We are impressed by both the similarities and the differences among youth in their outlook on the future." Timely and useful research ably reported. Should interest any college or university teacher.



recognizes that team research has weaknesses as well as strength, one weakness being a sacrifice of opportunity for independent work and even a loss of desire for it. He recognizes that individuality assures autonomy and the chance to resist control by others, but it also is isolation from one's fellows. It is freedom, but it is an "awful freedom that I can hardly face." He links individuality, intelligence, and democracy.

The participation of the individual is necessary in every process of intelligence, not merely in the processes of science. Intelligence can be given a meaning only in terms of the individual. . . . I believe that here is to be found the most compelling justification for democracy. Intelligence is based on the individual. An authoritarian society in which the individual is suppressed cannot, by the nature of intelligence, be characterized by *general* intelligence.

In the Preface the author raises a pressing question: "what are the inherent limitations imposed by our thinking mechanism? What is the significance of the fact that 'abstractions' and 'generalizations' and the very concepts of 'time' and 'space' occur only in conjunction with a human nervous system?" The answer to these questions, he says, "or perhaps a just appreciation of the significance of the questions, will lead us across a threshold into something new and revolutionary."

The range of topics and challenges, the analytical treatment, and the honesty and discernment in this book evoke reader respect and admiration. One must not, of course, expect too much. As the author, without disparagement of Einstein points to inconsistency, a reader perhaps may feel a limitation in Bridgman as probably in scientists generally—namely, the resolve "to carry through to the utmost the program of dealing with the universe by the methods of intelligence alone, without resorting to methods which may be roughly described as mystical or supernatural." There may be things in heaven and earth not dreamt of or at least not dealt with in this philosophy, but that is the limitation imposed.

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